

# ABSTRACT

An imaging system uses 'RF daylight' created by an RF illumination source, such as a television broadcast tower, to passively generate RF scattering coefficients for multiple points within a prescribed three-dimensional volume being illuminated by the RF transmitter. The scattering coefficients provide a complex interference pattern having amplitude and phase components that contain all information necessary to recreate a three-dimensional monochromatic image of the illuminated scene.

Coherent complex correlation provides scene information content that is only a function of scene scattering and collector geometry. The scene information may be coupled to an image utility subsystem, such as a virtual reality simulator, for generation of a three-dimensional image of the illuminated scene.